

Reedy River REPORT CARD 2022



The Reedy River at Cedar Falls

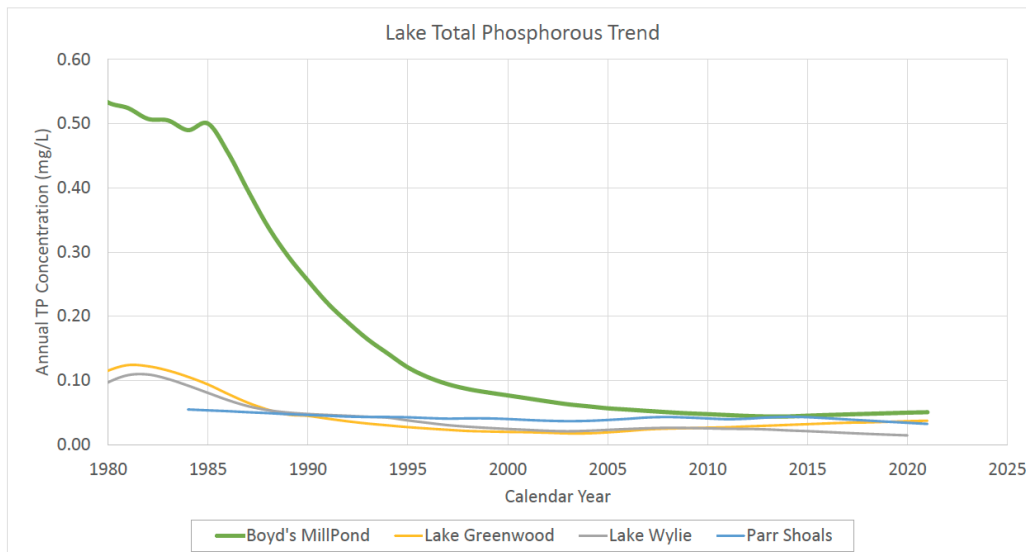
OVERVIEW

THE GENERAL HEALTH OF THE RIVER

The news is encouraging! The river is getting better every year, and we have come a long way since the days of the Rainbow Reedy! The river's health has significantly progressed since 1972, which is the year the Clean Water Act passed into legislation.

This chart shows the significant drop in phosphorus in Boyd's Millpond on the Reedy River. Phosphorus levels are now comparable to other local lakes.

Water quality in the Reedy River and the lakes it feeds, such as Boyd's Millpond, are similar and in some cases better than other rivers in the Upstate.



STORMWATER AND WASTEWATER PROGRAMS

Greenville County, The City of Greenville, and SC Department of Transportation maintain SCDHEC compliant stormwater programs to address many sources of pollutants to reduce potential impacts to the river.

ReWa operates two water resource recovery facilities that treat wastewater from the City and the County and discharge to the river. Their discharges comply with permits and standards required by SCDHEC to ensure that protection of public health and the water quality of the Reedy.

ADDITIONAL EFFORTS

The County, City, ReWa, and conservation organizations including [Friends of the Reedy River](#) and [Upstate Forever](#) are active and voluntary leaders in the [Reedy River Water Quality Group](#). This group leads Reedy River watershed efforts with SCDHEC and USEPA that specifically target nutrients.

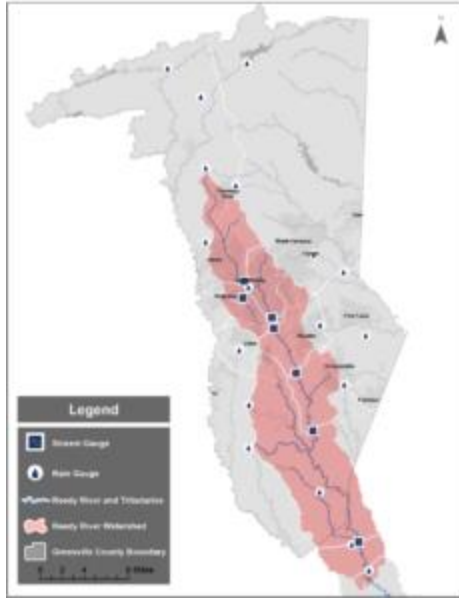
Wastewater and industrial plants also have SCDHEC permits to ensure they are not negatively impacting the Reedy.

WATER QUALITY

Water quality standards are established by the US Environmental Protection Agency, then adopted or made more stringent by the state's delegated authority. For South Carolina, this is the South Carolina Department of Environmental Services (SCDES). SCDES establishes water quality standards which waterways must meet. If the waterway does not meet its standard on a frequent basis (such as nitrogen), then the waterway becomes listed for that parameter on the state's biannual 303(d) List of Impaired Waterbodies.

Basic measurements that are used to determine a river's health are the following:

- pH - the measure of acidity of a waterway; changes can indicate contamination; heavily influences biological activity in a river for fish, macroinvertebrates, and wildlife.
- Dissolved Oxygen (DO) – measure of oxygen dissolved in the water; indicator of stress on the river and its ecosystem; required for life.
- Temperature – thermal stress is a potential pollutant in urban areas, where industrial process water or warm stormwater runoff flows directly from parking lots to waterways. Temperature affects wildlife and biological activity and influences how much oxygen the waterway can hold.



Nutrients play a critical role in waterways, driving algal growth, and affecting the balance of available dissolved oxygen for life. For our purposes, we are referring to phosphorus and nitrogen when we discuss nutrients.

Bacteria is another parameter monitored by the state. In freshwater, the standard is to measure *Escherichia coli*, or *E. coli*, to indicate the presence of fecal waste in waterways and the potential threat of viruses and pathogens. This presence of bacteria (and viruses) can be harmful to people and pets alike.

Although sediment transport is a natural function of a waterway, excessive sediment is considered to be one of our most significant pollutants, though SC has no standard for measuring the impact or significance of this pollutant in creeks or rivers. Sediment covers and interrupts habitat for macroinvertebrates (the bottom of the food chain for fish) and carries other pollutants with it, attached to the sediment particles. This includes nutrients and metals. Sediment is also regularly correlated to bacteria, meaning that with increased sediment, bacteria populations also increase.

The Reedy River and its tributaries meet or exceed water quality standards for dissolved oxygen and pH, while temperature and phosphorus concentrations have improved dramatically. There is room for improvement in nitrogen meeting in-stream standards at many locations for biological health and *E. coli*. The adjacent map shows locations where Greenville County is actively collecting data to measure water quality.

The Good News



Since the 1990's, phosphorus concentrations have decreased by more than half throughout the Reedy River watershed. In fact, the Reedy was removed from SCDES's impaired water list for phosphorus at Boyd's Millpond in 2016.



The general population has an active, individual role to play in lowering nitrogen levels in the river.



Additional data is now being collected through the SC Adopt-a-Stream program, an active citizen science network.



Greenville County and the City of Greenville continue to maintain their stormwater management programs with a major element to reduce erosion (ie. sediment) during construction.



In addition, ReWa has invested in nutrient removal upgrades at their two water resource recovery facilities to reduce phosphorus discharged to the river by more than 90%.

The Bad News



Lake Greenwood and Boyd's Mill Pond, lakes fed by the Reedy River, have an excess of nitrogen, based on the SCDES lake standards. Unfortunately, increased population means that it is likely that these levels will increase because of the nature of population density on rivers.



Boyd's Millpond

RECREATION

More and more people are looking to recreate in the Reedy River. The good news is that recreation in the Reedy River is only a problem 24-48 hours after a rain event. A good rule of thumb - if the river is brown with sediment, keep out!

The Good News



Lake Conestee Nature Park currently offers approximately six miles of natural surface trails, six miles of paved trails and approximately 4,000 linear feet of boardwalks and bog-walks with learning loops teaching about wildlife and wetlands.



The Reedy is deemed safe for fishing, except in the Lake Conestee Nature Preserve.



E. coli levels in the Reedy tend to be above acceptable levels only after a rain event.



Upstate Forever recently published a [Blueways map](#) with boat inputs along the Reedy.



Park space is increasing in the Reedy watershed. Recent additions include Unity Park and the Swamp Rabbit Trail. Additionally, the City of Greenville's recently adopted comprehensive plan, GVL 2040, has established a goal to proactively preserve as much as 35% of the City's remaining vacant land as open space or parkland in order to bolster quality of life and protect environmental assets.

The Bad News



You still can't swim, fish or boat in Lake Conestee and will not be able to in the future. LCNP is deemed a Brownfield Site.



E. coli levels rise and make the river unsafe for contact immediately after a rain. *E. coli* is discharged to the river from wild animals and pets, overland flow, malfunctioning septic tanks, leaky private sewer service laterals, and [sanitary sewer](#) overflows (SSOs).



Lake Conestee Nature Preserve

WILDLIFE

So, how does the quality of the water in the Reedy River impact wildlife?

In stretches of the Reedy, you can observe muskrats, river otters, deer, blue herons, geese, and ducks. Based on fish surveys performed by the SC Department of Natural Resources (SC DNR), sunfish are abundant, especially in large tributaries draining to the Reedy. The Swamp Rabbit Trail allows users to view wildlife in and along the river. While dissolved oxygen may not be inhibiting fish and wildlife, pH does alter spawning, ammonia in the river, and more, potentially impacting wildlife and especially fisheries.

The Good News



Lake Conestee Nature Preserve (LCNP) has been designated as an Important Bird Area of Global Significance by the National Audubon Society.



Deer, raccoon, beaver, fox, river otter, and various small mammals inhabit LCNP, along with numerous species of reptiles and amphibians.



The Dissolved Oxygen levels, of paramount importance to aquatic wildlife, always exceed acceptable limits in the Reedy, meaning there's lots of air to breathe!



Virtually all rivers in the state and region have elevated turbidity during storm events, yet the river is only elevated for a small fraction of the year.



Buffers are important to river health. During construction, per state law, all permitted construction sites must maintain a 35' buffer. The City currently has legislated buffer areas along the Reedy. The county requires a 45' forested buffer along waterways for all new development.



The City of Greenville has recently gone to great lengths to remove invasive vegetation along the banks of the Reedy and stabilize the river bank, and in some areas, very steep stream banks.

The Bad News



While both the City and County have riparian buffers to capture and treat for nutrient pollution and sediment, and mitigate flood concerns, a minimum 100' riparian buffer has been proven effective. Nutrients, specifically, are better captured in wider buffers of a minimum of 100'.



Like many metropolitan areas, urban runoff includes metals from vehicles and carcinogens from coal tar sealants that end up in the Reedy River and in fish tissue.



There is a strong connection between land use and the health of fish communities. By 2030, it is predicted that approximately 75% of the Reedy watershed will contain streams with "poor" biological conditions resulting from extensive urban development.



Sediment levels are elevated following storm events.



Riparian zones are typically dominated by nonnative, invasive plants such as kudzu, ailanthus (Tree of Heaven), mimosa trees, and Chinese privet. In the past few years, Japanese knotweed is also beginning to expand along the Reedy's banks. The rapid growth of these nonnative species decreases biodiversity in the Reedy River watershed.



All partners in the Reedy River Water Quality group have been stabilizing streambanks in the watershed. Stabilizing streambanks helps to control streambank erosion, which can be a source of excess phosphorus and sediment. Both of these can negatively impact wildlife.



ReWa is redeveloping the Mauldin Road water resource recovery facility campus with a strategic objective to enhance community education about the Reedy River and the efforts of ReWa to protect environment and water quality. The redevelopment includes public access areas, habitat preservation, interactive displays in the new laboratory building, and the installation of a "litter trap" in the Reedy River.